

CLAIMS

WE CLAIM:

1. a seed planting assembly comprising:
a laterally extending tool bar;
a planting unit including a planting unit frame supported by the tool bar,
wherein the planting unit frame carries:
 - 5 i. a seed trench opening assembly operable to create a seed trench;
 - ii. a seed delivery assembly delivering seeds into the seed trench; and
 - iii. a seed trench closing assembly operable to close the seed trench;a mounting assembly pivotally linking the planting unit frame with the tool bar,
wherein the mounting assembly permits the planting unit to raise and lower with respect to
10 the tool bar; and
a vertical positioner including a first linkage connected to the mounting assembly, and
a second linkage connected to the first linkage at a positioner joint and further in
communication with the frame, wherein the second linkage can be actuated to raise the
planting unit.
2. The seed planting assembly as recited in claim 1, wherein the mounting
assembly includes an upper and lower beam member, each of which in communication with
the tool bar at a forward end, and in communication with the planting unit frame at a
rearward end.
3. The seed planting assembly as recited in claim 2, wherein the first linkage is
connected to the lower beam member, and wherein the second linkage is connected to the
upper beam member.
4. The seed planting assembly as recited in claim 3, wherein the second linkage
is connected to the upper beam member at a location between the planting unit and the
positioner joint.
5. The seed planting assembly as recited in claim 3, wherein the first and second
linkages are pivotally connected to the mounting assembly.

6. The seed planting assembly as recited in claim 3, wherein the lower beam member defines a plurality of locations spaced along the lower beam and configured to connect to the first linkage.

7. The seed planting assembly as recited in claim 1, wherein the second linkage defines a slot operable to receive an actuating lever.

8. The seed planting assembly as recited in claim 1, wherein the first linkage further comprises a stop that engages the second linkage when the planting unit is raised.

9. The seed planting assembly as recited in claim 2, wherein the first linkage is connected to the lower beam member, and wherein the second linkage is connected to the planting unit.

10. A method for changing a vertical position of a seed planting assembly including 1) a seed trench opening assembly operable to create a seed trench, 2) a seed delivery assembly delivering seeds into the seed trench, and 3) a seed trench closing assembly operable to close the seed trench, the method comprising the steps of:

5 supporting the planting unit on a tool bar via a mounting assembly that permits the planting unit to raise and lower with respect to the soil;

actuating a lever in communication with the mounting assembly via a vertical position to change the vertical position of the seed planting assembly relative to the tool bar.

11. The method as recited in claim 10, wherein the mounting assembly is in pivotal communication with the tool bar at a forward end, and in pivotal communication with the planting unit at a rearward end.

12. The method as recited in claim 11, further comprising placing the lever in pivotal communication with the mounting assembly.

13. The method as recited in claim 12, further comprising actuating vertical positioner including a first connected to the mounting assembly and a second linkage connected to the planting unit, wherein the first and second linkages join at a positioner joint.

14. The method as recited in claim 13, wherein the mounting assembly further comprises upper and lower beam members in communication with the tool bar at a forward end, and in communication with the planting unit at a rearward end.

15. The method as recited in claim 14, further comprising connecting the first linkage to the lower beam member.

16. The method as recited in claim 15, further comprising connecting the second linkage to the upper beam member.

17. The method as recited in claim 15, further comprising connecting the second linkage to the planting unit.

18. The method as recited in claim 13, further comprising inserting the lever into a slot formed in the second linkage.

19. The method as recited in claim 13, further comprising engaging the second linkage with a stop disposed on the first linkage when the planting unit is raised.

20. The method as recited in claim 14, further comprising engaging the first linkage with one of a plurality of mounting locations disposed on the lower beam member.